

Ammar Alam

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Work Experience

- **Software Engineer** – Stellic Jul '22 — Present
 - Spearheaded the development and integration of key features, including General Requirements, test scores, and enrollment levels, into a degree management system adopted by 70+ universities worldwide, including MIT and CMU, and used by over 1 million students. Delivered the General Requirements feature with 70% test coverage, making it the first feature built entirely using Clean Architecture.
 - Designed and delivered training sessions on Test-Driven Development (TDD) and Mob Programming, reducing code review cycles and improving team productivity.
 - Architected scalable backend services using Python/Django Rest Framework, achieving speedups of 10^1 – 10^3 x in API response times by optimizing database interactions through bulk operations, prefetching, and async operations using Celery.
 - Conducted research into software architecture patterns and led the migration to Clean Architecture, increasing overall repository test coverage from less than 3% to 18% in a codebase of 500,000+ lines, significantly improving maintainability and facilitating faster development of new features.
- **Data Engineering Intern** – Systems Ltd. Feb '22 – Apr '22
 - Researched and implemented machine learning-based Robotic Process Automation solutions to optimize business workflows.
 - Engineered efficient ETL pipelines using Python, Pandas and Selenium, reducing data processing time by 90% in administrative tasks for various clients
- **Computer Vision Intern** – The Sparks Foundation Jun '21
 - Conducted research comparing performance of different face detection algorithms, implementing Haar Cascades and deep learning approaches using Keras.
 - Developed novel dataset integration methodology to combine multiple face mask datasets, achieving 99% accuracy on mask detection through transfer learning techniques.

Technical Skills

- **Languages:** Python, Bash, JavaScript, C++, SQL, Verilog, MATLAB
- **Frameworks/Libraries:** Django, React, OpenCV, TensorFlow, WebGL, CUDA, NLTK, Pandas, Matplotlib
- **Infrastructure/Cloud:** AWS (EC2, S3, EBS, ECR), Docker, Redis, GitHub Actions
- **Monitoring/Logging:** Grafana/Loki, Datadog, Sentry
- **Collaboration/Tools:** Git, Postman, OpenAPI, Notion, Asana

Education

- **Habib University**, Pakistan Aug '18 – Jun '22
 - B.Sc. in Computer Science, Minor in Electrical & Computer Engineering, Minor in Mathematics
 - CGPA:** 3.76/4.00

Honors, Awards, and Memberships

- Member, ACM; Vice Chair, ACM Habib Chapter
- 60% Academic Scholarship Habib University
- President's List: Consecutive appearances in Dean's List
- Dean's List: Top 10% of department Spring '19, Fall '19, Fall '20

Publications

- [1] **S. M. A. Alam**, M. U. Huda and M. Farhan, "[Alpha-trimmed Mean Filter and XOR based Image Enhancement for Embedding Data in Image](#)", 2021 International Conference on Visual Communications and Image Processing (VCIP), Munich, Germany, 2021, pp. 1-4, doi: 10.1109/VCIP53242.2021.9675315.